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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,498	08/29/2005	Georg Tempel	10808/201	9218
48581 7590 01/30/2008 BRINKS HOFER GILSON & LIONE INFINEON PO BOX 10395 CHICAGO, IL 60610				
EXAMINER WEISS, HOWARD				
ART UNIT 2814		PAPER NUMBER		
MAIL DATE 01/30/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/521,498

**Applicant(s)**

TEMPEL, GEORG

**Examiner**

Howard Weiss

**Art Unit**

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 0105

Attorney's Docket Number: 10808/201

Filing Date: 8/29/2005

Continuing Data: 371 of PCT/DE03/02352 (07/11/2003)

Claimed Foreign Priority Date: 7/15/2002 (GEX)

Applicant(s): Tempel

Examiner: Howard Weiss

***Election/Restrictions***

1. Applicant's election without traverse of the Group II invention, Claims 9 to 20, in the reply filed on 12/5/2007 is acknowledged. Claims 1 to 8 have been canceled.

***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Objections***

3. Claim 10 recites the limitation "the semiconductor substrate having a (100) surface orientation" in Lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 9, 11, 12 and 14 to 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Legoues et al. (U.S. Patent No. 5,810,924).

Legoues et al. show all aspects of the instant invention (e.g. Figure 1) including:

➤ forming a Si carrier **12** with a (100) surface orientation

- forming a SiGe crystalline stress generator layer **16**
- forming a CaF<sub>2</sub> insulating stress-transmitting layer **18** (Column 15 Lines 13 to 24)
- forming a Si stress-absorbing, crystalline semiconductor layer **22**
- forming a high dielectric constant gate dielectric **26** and a metal control layer **35** on said Si stress-absorbing semiconductor layer and source/drain regions **37,38** in said Si stress-absorbing semiconductor layer

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Legoues et al. and Cho (U.S. Patent No. 5,569,538).

Legoues et al. show most aspects of the instant invention (Paragraph 5) except for the buffer layer epitaxially deposited on the Si carrier and using molecular beam epitaxy process. Cho teaches (e.g. Figure 1 and Column 3 Lines 55 to 62) to form a buffer layer **22** epitaxially deposited on a Si carrier **20** and using molecular beam epitaxy process to form an SOI structure without defects (Column 2 Lines 11 to 20). It would have been obvious to a person of ordinary skill in the art at the time of invention to form a buffer layer epitaxially deposited on a Si carrier and using molecular beam epitaxy process as taught By Cho in the process of Legoues et al. to form an SOI structure without defects.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Legoues et al. and Kim et al. (U.S. Patent No. 6,475,857).

Legoues et al. disclose the claimed invention (Paragraph 5) except for the use of the explicitly use of  $\text{HfO}_2$  as the gate dielectric and TiN as the control layer. Kim et al. 2 teach (Column 11 Lines 19 to 29 and Column 13 Lines 5 to 8) that  $\text{HfO}_2$  and TiN are equivalent gate dielectric and control layer materials known in the art. Therefore, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of invention. See Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

### ***Conclusion***

9. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via [Howard.Weiss@uspto.gov](mailto:Howard.Weiss@uspto.gov). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.
11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

12. The following list is the Examiner's field of search for the present Office Action:

Field of Search		Date
U.S. Class / Subclass(es):	257/E21.125	1/28/2008
Other Documentation:	PLUS Analysis Report	1/28/2008
Electronic Database(s):	EAST	1/28/2008

HW/hw  
30 January 2008

/Howard Weiss/  
Primary Examiner  
Art Unit 2814